

## ABSTRACT

The present invention provides a water-soluble luminescent quantum dot, a  
5 biomolecular conjugate thereof and a composition comprising such a quantum dot or  
conjugate. Additionally, the present invention provides a method of obtaining a  
luminescent quantum dot, a method of making a biomolecular conjugate thereof, and  
methods of using a biomolecular conjugate for ultrasensitive nonisotopic detection *in*  
*vitro* and *in vivo*.

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